AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for color correction including:

(1) the gray levels and the luminance values of a light source of a display device being measured by a color measurement system;

(2) the gray levels and luminance values being normalized and N groups of gray levels (P) and luminance values (Q) being selected, wherein N is a positive integer and $2 \leqq N \leqq$ maximum [[which]]of what the display device can display;

(3) each n groups of selected values being taken as an interval, wherein n is a positive integer and $2 \leqq n \leqq N$;

(4) the gray levels (P) and the luminance values (Q) of each interval being executed by logarithmic and divisional operations to obtain a gamma parameter: $\gamma = \log Q / \log P$, then a fitting function of the gamma parameter for each interval being able to be obtained, which can fit all selected data of the interval;

(5) [[the]]a fitting luminance value of each gray level in interval being able to be obtained from the fitting function of the gamma parameter for each interval of each color light of the light source, and then a lookup table consisted of gray levels and their corresponding fitting luminance values being able to be made;

(6) [[the]]original gray data of an image being normalized to obtain a gamma curve consisted of gray levels (X) and luminance values (Y) of each color light of the light source, where the function of the gamma curve ~~function~~ is $Y = X^{\gamma}$, and γ [[being]] represents the gamma parameter;

(7) the image gray signals of the function of the gamma curve ~~function~~ $Y = X^{\gamma}$ being corresponded to a function of a predetermined target curve ~~function~~ $Yt = Xt^{\gamma'}$, letting Xt

=X and obtaining a modified gray signals by an iteration method, its steps including:

(a) the gamma curve function and the target curve function being executed logarithmic and divisional ~~operation~~operations, i.e. $\log Yt=(Y'/Y)\log Y$, to obtain [[the]]a target luminance value Yt;

(b) obtaining a transitional luminance value Yn corresponding with [[a]]transitional gray levels Xn from the lookup table;

(c) comparing the transitional luminance value Yn with the target luminance value Yt, if the difference between them is smaller than a ~~toterable~~tolerable error, then the target luminance value Yt and the target gray level Xt being substituted by the transitional luminance value Yn and transitional gray level Xn, respectively, if the difference between them being larger than a tolerable error, then the steps (a) to (c) mentioned above being repeated; and

(d) transmitting the ~~modified~~ gray signals ~~being transmitted out~~ processed through steps (a) to (c), and the display device expressing [[the]] a gray distribution state according to the modified gray signals.

2. (Currently Amended) The method for color correction as claimed in claim 1, wherein the light source [[are]]includes red, green and blue (RGB) color lights.

3. (Currently Amended) The method for color correction as claimed in claim 1, wherein [[the]] maximum gray level and luminance value are taken [[of]]from the ~~neighboring~~ gray levels and luminance values in [[each]]neighboring ~~interval are taken~~intervals to obtain [[the]]a gamma parameters, i.e. $\gamma=\log Q_{max}/\log P_{max}$.

4. (Currently Amended) The method for color correction as claimed in claim 1, wherein the fitting function is a polynomial function of the gamma parameter $Q=\sum_{m=2}^{n} a_m P^{\gamma_m} + a_1 P + a_0$, n being a positive integer and $2 \leqq n \leqq N$, $a_{n-1}=0$, a_m, a_1 and a_0 being the coefficients of the function, γ_m being determined by the gray levels (P) and luminance values (Y) of each interval.

5. (Currently Amended) A method for color correction including:
   (1) the gray levels and the luminance values of a light source of a display device being measured by a color measurement system;
   (2) the gray levels and luminance values being normalized and N groups of gray levels (P) and luminance values (Q) being selected, wherein N is a positive integer and $2 \leqq N \leqq$ maximum [[which]]of what the display device can display;
   (3) each n groups of selected values being taken as an interval, wherein n is a positive integer and $2 \leqq N \leqq$;
   (4) the gray levels (P) and luminance values (Q) of each interval being executed by logarithmic and divisional ~~operation~~operations to obtain a gamma parameter: $\gamma = \log Q / \log P$, , then a fitting function of the gamma parameter for each interval being able to be obtained, which can fit all selected data of the interval; and
   (5) a fitting luminance value of each gray level in interval being able to be obtained from the fitting function of each interval of each color light, thereby the display device being able to express the gray distribution state according to the modified gray levels and luminance values.

6. (Currently Amended) The method for color correction as claimed in claim 5, wherein the maximum of neighboring gray levels and luminance values in each interval are taken to obtain the gamma parameter, i.e. $\gamma = \log Q_{max} / \log P_{max}$.

7. (Original) The method for color correction as claimed in claim 5, wherein the fitting function is a polynomial function of the gamma parameter $Q = \sum_{m=2}^{n} a_m P^{\gamma_m} + a_1 P + a_0$, n being a positive integer and 2□n□N, a_{n-1}=0, a_m, a_1 and a_0 being the coefficients of the fitting function, γ_m being determined by the gray levels of each interval.

8. (Original) The method for color correction as claimed in claim 5, wherein the light source are red, green and blue color lights, the measured gray levels of red light being: 0, 31, 63,

95, 127, 159, 191, 207, 223, 239, 255, the measured gray levels of green light being: 31, 63, 95, 127, 159, 191, 207, 223, 239, 255, and the measured gray levels of blue light being: 30, 63, 96, 129, 162, 195, 215, 235, 255.

9. (Original) The method for color correction as claimed in claim 5, wherein the display device is a liquid crystal display device.

10. (Original) The method for color correction as claimed in claim 5, wherein the display device is a projector.

11. (Original) The method for color correction as claimed in claim 5, wherein the display device is a plasma display panel.

12. (Currently Amended) A method for color correction including:

(1) the image gray signals of gamma curve function $Y=X^{\gamma}$ being corresponded to a predetermined target curve function $Yt=Xt^{\gamma'}$, letting Xt=X and obtaining a modified gray signals by an iteration method, its steps including:

(a) the gamma curve function and the target curve function being executed by logarithmic and divisional ~~operation~~operations, i.e. $\log Yt = (\gamma'/\gamma)\log Y$ to obtain the target luminance value Yt;

(b) obtaining the transitional luminance value Yn corresponding with the transitional gray levels Xn from a lookup table;

(c) comparing the transitional luminance value Yn with the target luminance value Yt, if the difference between them is smaller than a tolerable error, then the Yt and Xt being substituted by the Yn and Xn, respectively, if the difference between them being larger than a tolerable error, then the steps mentioned above being repeated;

(d) the modified gray signals containing target gray levels Xt being transmitted out; and

(2) the modified gray signals being transmitted out, and then the display device being able to express the gray distribution state according to the modified gray signals.

13. (Currently Amended) The method for color correction as claimed in claim 12, wherein the lookup table containing the luminance value corresponding with each gray level being able to be adjusted and obtained by a user.